

## **IN THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A mobile node supporting router comprising:

a home link interface connected to a home link of a mobile node; and

a plurality of foreign link interfaces each connected to a foreign link of the mobile node;

the foreign link interfaces each having an encapsulating cache for storing binding information of the mobile node and a processor for encapsulating a packet addressed to the mobile node with a care-of address included in the binding information,

wherein

the binding information comprises information associating a home address of the mobile node with a care-of address at a time of moving, and

each processor transfers the encapsulated packet based on the binding information stored in each encapsulating cache from an output interface associated with the care-of address by the binding information, whereby the encapsulated packet is transferred through the foreign link interfaces, not through the home link interface.

2 – 3 (Cancelled)

4.(Original) The mobile node supporting router as claimed in claim 1 wherein the binding information includes a lifetime of the binding information itself.

5. (Original) The mobile node supporting router as claimed in claim 1 wherein the processor transmits the encapsulated packet to an output interface through a packet transfer route.

6. (Cancelled)

7. (Previously Presented) The mobile node supporting router as claimed in claim 1 wherein when receiving a binding demand packet from the mobile node, the processor stores the binding information included in the binding demand packet in the encapsulating cache.

8. (Original) The mobile node supporting router as claimed in claim 7 wherein the processor provides a binding reply packet for the binding demand packet to an output interface through a packet transfer route.

9. (Previously Presented) The mobile node supporting router as claimed in claim 7 wherein the encapsulating cache stores an output interface for outputting the binding reply packet in association with a care-of address of the mobile node within the binding information, and the processor provides the binding reply packet to the output interface based on the binding information.

10. (Previously Presented) The mobile node supporting router as claimed in claim 1 wherein when the encapsulating cache does not store the binding information of the mobile node upon receiving a packet associated with the mobile node, the processor acquires the binding information from a home agent.

11. (Previously Presented) The mobile node supporting router as claimed in claim 10 wherein the packet associated with the mobile node comprises a packet addressed to the node.

12. (Previously Presented) The mobile node supporting router as claimed in claim 10 wherein the packet associated with the mobile node comprises a binding demand packet from the node.

13. (Original) The mobile node supporting router as claimed in claim 10 wherein the processor notifies the home agent, by a request message, that the processor does not store the binding information.

14. (Previously Presented) A mobile node supporting router comprising:

- a home link interface connected to a home link of a mobile node; and
- a foreign link interface connected to a foreign link of the mobile node;

the foreign link interface having an encapsulating cache for storing binding information of the mobile node and a processor for encapsulating a packet addressed to the mobile node with a care-of address included in the binding information,

wherein the binding information comprises information associating a home address of the mobile node with a care-of address at a time of moving, and

the processor outputs the encapsulated packet based on the binding information stored in the encapsulating cache from an output interface associated with the care-of address by the binding information,

wherein when the encapsulating cache does not store the binding information of the mobile node upon receiving a packet associated with the mobile node, the processor acquires the binding information from a home agent, and wherein the processor notifies the home agent, through a packet transfer route by assigning to the packet an identifier of a foreign link interface to which the processor itself belongs, that the processor does not store the binding information.

15. (Original) The mobile node supporting router as claimed in claim 10 wherein the processor acquires the binding information from the home agent through an in-device control route.

16. (Original) The mobile node supporting router as claimed in claim 10 wherein the processor acquires necessary information from a routing table through an in-device control route.

17. (Original) The mobile node supporting router as claimed in claim 10 wherein when receiving a notification that the encapsulating cache does not store the binding information, the home agent notifies necessary information to the processor from a binding cache held by the home agent itself.

18. (Original) The mobile node supporting router as claimed in claim 17 wherein the home agent notifies the binding information by a reply message through a packet transfer route.

19. (Original) The mobile node supporting router as claimed in claim 17 wherein the home agent notifies the binding information through an in-device control route.

20. (Previously Presented) A mobile node supporting router comprising:

- a home link interface connected to a home link of a mobile node; and
- a foreign link interface connected to a foreign link of the mobile node;
- the foreign link interface having an encapsulating cache for storing binding information of the mobile node and a processor for encapsulating a packet addressed to the mobile node with a care-of address included in the binding information,

wherein the binding information comprises information associating a home address of the mobile node with a care-of address at a time of moving, and

the processor outputs the encapsulated packet based on the binding information stored in the encapsulating cache from an output interface associated with the care-of address by the binding information,

wherein when the encapsulating cache does not store the binding information of the mobile node upon receiving a packet associated with the mobile node, the processor acquires the binding information from a home agent, and

wherein when a notification is performed by an identifier of an output interface, the home agent notifies the binding information to which an identifier of an output interface to which the home agent itself belongs is assigned.

21. (Previously Presented) A mobile node supporting router comprising:

- a home link interface connected to a home link of a mobile node; and
- a foreign link interface connected to a foreign link of the mobile node;
- the foreign link interface having an encapsulating cache for storing binding information of the mobile node and a processor for encapsulating a packet addressed to the mobile node with a care-of address included in the binding information,

wherein the binding information comprises information associating a home address of the mobile node with a care-of address at a time of moving, and the processor outputs the encapsulated packet based on the binding information stored in the encapsulating cache from an output interface associated with the care-of address by the binding information,

wherein when the encapsulating cache does not store the binding information of the mobile node upon receiving a packet associated with the mobile node, the processor acquires the binding information from a home agent,

wherein when receiving a notification that the encapsulating cache does not store the binding information, the home agent notifies necessary information to the processor from a binding cache held by the home agent itself, and

wherein the home agent preliminarily stores a foreign link interface to which the notification has been transmitted, so that upon receiving a binding demand packet from the mobile node, the home agent transmits binding information included in the binding demand packet to the stored foreign link interface.

22. (Previously Presented) The mobile node supporting router of claims 1, wherein the foreign link interface includes a processor for exchanging mobile IP messages instead of a home agent of the mobile node.

23. (Previously Presented) The mobile node supporting router as claimed in claim 22 wherein the mobile IP message comprises a binding demand packet received from the mobile node and a binding reply packet which responds to the binding demand packet.

24. (Original) The mobile node supporting router as claimed in claim 22 wherein when receiving information necessary for updating binding information which a binding cache of the home agent stores by the mobile IP message, the processor transmits the necessary information to the home agent.

25. (Previously Presented) The mobile node supporting router as claimed in claim 1 wherein a home agent is at least either on the home link or included in the home link interface.